SR101 Corridor Planning/Environmental Assessment Study
INDOT Position Paper 2004 Long-Range Plan Update August 9, 2004

INDOT Position

In reviewing the SR101 Corridor Planning/Environmental Assessment Study and the comments received from the reviewing agencies, transportation stakeholder and the public on the study recommendations, it is INDOT's position not to include a new alignment SR101 project connecting US50 to the existing SR101 located at the Markland Dam in the new 2030 Long-Range Transportation Plan. The plan currently under development will focus on improving the existing SR129 and SR56/SR156 connection between US50 and SR101 at the Markland Dam. This work will include completion of the existing SR129 reconstruction, realignment and modernization currently underway from SR250 to SR56. In addition roadway safety improvements, traffic system management improvements at intersections and roadway reconstruction activities will be developed to improve the traffic carrying ability of SR56 and SR156 to connect to the SR101 segment on the Markland Dam Bridge. It is recognized this route will become increasing important due to the economic development in southeastern Indiana and in its connective to I-71 in northern Kentucky. KY 39 is under construction and will connect I-71 with SR101 on the Markland Dam bridge. A new KY39 interchange was recently constructed on I-71 to serve the new connecting roadway. Recognizing the increased importance of the US50 to I-71 linkage, the SR129, SR56/SR156 to SR101 connection will be evaluated in the INDOT 2004 plan update to be upgraded from a local access mobility corridor to a regional mobility corridor.

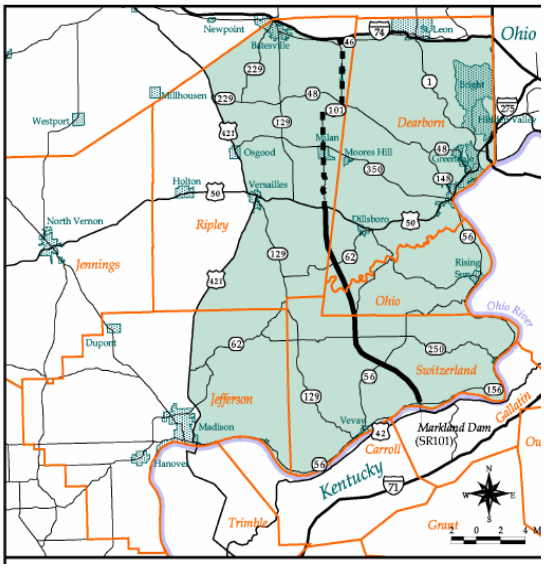
Study Overview

INDOT undertook the SR 101 Corridor Improvement Feasibility/NEPA Study to assess the implications of improving north-south access in the southeastern Indiana between US50 and SR56/SR156 connecting to the Markland Dam Bridge and SR101 into northern Kentucky and I-71. The corridor study was to evaluate travel demand in the SR 101 study area and to identify feasible improvement alternatives. The study was conducted under Indiana's Streamlined EIS Procedures (July 6, 2001) in accordance with the National Environmental Policy Act (NEPA). An initial element of the SR 101 Corridor Improvement Feasibility Study was the development of a statement of the study's purpose and need. Two key transportation needs were identified for the study area which provided a basis for development and assessment of improvement alternatives:

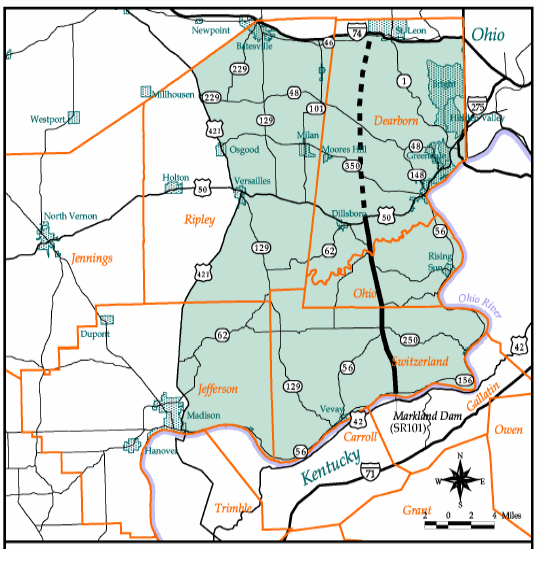
- Improve roadway safety and reduce accident frequency
- Improve regional accessibility and connectivity

A list of 8 alternatives including a "No Build" option was developed for preliminary screening. Each build alternative featured an "A" component which connected the Markland Dam with US 50 and a "B" component which completed the connection to I-74. For screening purposes, each "B" component included its "A" counterpart. Preliminary screening reduced these eight to three alternatives (2A/B, 3A/B, 16A/B,) plus the "No Build" (Alt. 5) option. The remaining alternatives were subjected to more detailed analysis.

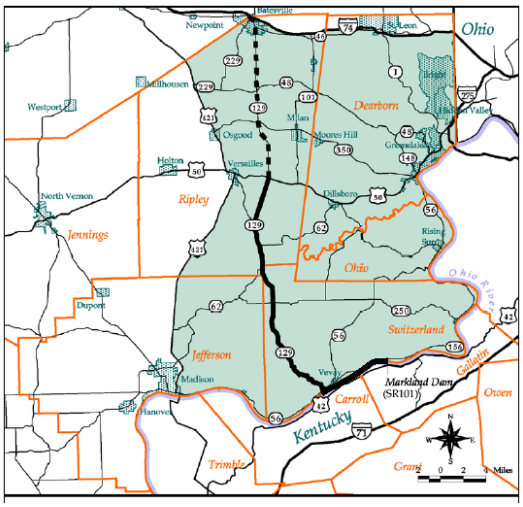
Alternative 2A/2B



Alternative 3A/3B



Alternative 16A/16B



Each alternative was evaluated in terms of:

- improvements to transportation safety, accessibility, and connectivity,
- impacts to human and natural environments
- economic benefits to region
- construction and maintenance costs

In the development of the reports preliminary recommendations, the consultant made the recommendation that Alternative 3B preformed the best in meeting the purpose and need and be implemented in three phases:

Phase 1: Identify specific locations with significant traffic operational and safety problems in Switzerland and Ohio Counties, and apply low-cost, TSM-type traffic operational improvements. Priority roadways should be SR 56 and SR 156. Improvements to SR 129 in Switzerland County are programmed for construction in 2004.

Phase 2: Design and construct the southern portion of Alternative 3B between Markland Dam and U.S. 50.

Phase 3: Design and construct the northern portion of Alternative 3 from U.S. 50 to I-74.

Due to concerns raised by USEPA in review of the preliminary recommendations regarding excluding alternatives, Alternative 2B was also retained as a possible alternative for further analysis. Project construction cost estimates are shown in the Table below:

Project Cost Estimates (2-lane Roadway Concept)

Alternative	Length (Miles)	Total Project Capital Costs
2A	21.5	$65,797,000
2B	38.8	$113,945,000
3A	16.9	$53,167,000
3B	35.3	$118,075,000
16A	33.7	$38,152,501
16B	51.0	$50,745,000

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Economic Feasibility Analysis

In order to make a judgment as to the economic feasibility of developing a transportation improvement a comparison was made of potential benefits versus costs. For this evaluation we included economic impact-based analysis in addition to the more traditional benefit/cost analysis that relies simply on user benefits and cost (the costs to build and operate/maintain the system). These costs and benefits include the following:

Costs

- Capital costs for construction of the highway, including roadway, bridge construction or removal, grade separations (overpasses), interchanges, and right-of-way acquisition
- Operation and maintenance costs once the highway is completed

Benefits

- Direct highway user benefits for personal auto travel
- Business expansion impacts (includes direct highway business user benefits and related secondary impacts)
- Business attraction impacts (includes direct and secondary impacts)
- Tourism impacts (includes direct and secondary impacts)

The economic impacts of construction and operational expenditures (frequently government spending) are not included in this analysis. A 30-year time period was used for this analysis to allow capturing the benefits of the project. Costs and benefits are expressed in constant (or real as opposed to current or nominal) 2002 dollars to enable comparability. The value of costs and benefits that will occur in future years is discounted to account for the opportunity cost of capital

and time value of money. Use of the discounted "present value" of future costs and benefits thus provides a consistent basis for comparing costs and benefits accruing at different times in the future. Two indicators of economic feasibility were developed through this analysis:

1. **Net present value (NPV),** which represents the difference between the discounted stream of future benefits and the discounted stream of future costs, allowing a direct comparison among all alternatives with respect to overall return on investment; and

2. **Benefit/cost ratio (B/C),** which represents the discounted stream of future benefits divided by the discounted stream of future costs, allowing inspection of the magnitude of benefits vs. costs generated by the particular investment (all else equal, a B/C above 1.0 is a positive investment).

The table below displays the results of the economic benefit/cost analysis for the SR 101 corridor improvements in southeast Indiana. The table displays a B/C ratio, and the detailed components of the analysis for each project alternative. While all three build alternatives generate B/C ratios less than 1.0, Alternative 3B has the highest benefit/cost ratio (0.80), followed by Alternative 2B (0.47), and Alternative 16B (0.34). Similarly, while each of the three build alternatives has a negative NPV, Alternative 3B has the highest value (-$19.0 million), followed by Alternative16B (-$26.1 million) and Alternative 2B (-$48.4 million). Not accounting for the alternatives costs, in terms of the alternatives sheer discounted benefits, Alternative 3B is the largest ($76.3 million), followed by Alternative 2B ($42.2 million), and Alternative 16B ($13.6 million).

A B/C ratio above 1.0 and a NPV above zero indicate that benefits exceed costs, and represent the lowest value that should be considered for a transportation investment if no other factors are to be considered, and if there is no uncertainty in the analysis. As noted below, none of the build alternatives achieve a B/C ratio above 1.0 or a net present value above zero.

Economic Benefit/Cost Analysis of SR 101 Corridor Improvements

	Alternative 2B	Alternative 3B	Alternative 16B
Benefits			
NPV Non-Business Auto	$4.3 M	$6.0 M	-$9.0 M
NPV Personal Income	$37.9 M	$70.3 M	$22.6 M
Costs			
NPV of Capital Costs	$86.3 M	$88.2 M	$38.4 M
NPV of Operating Costs	$4.3 M	$7.1 M	$1.3 M
Total Discounted Benefits	$42.2 M	$76.3 M	$13.6 M
Total Discounted Costs	$90.6 M	$95.3 M	$39.7 M
NPV (Benefits Minus Costs)	-$48.4 M	-$19.0 M	-$26.1 M
Benefit/Cost Ratio	**0.47**	**0.80**	**0.34**

(Millions of 2002 Dollars, Net Present Value, Cumulative Change, 2003-2032) Source: Cambridge Systematics, Inc.

Transportation Stakeholder/Public Comment

As the SR101 study progressed and additional detail was developed on the alternatives following new terrain alignments, the study began receiving comments relative to the negative impacts of these alternatives. The last public information meeting for this study took place in Dillsboro on January 22, 2003. This meeting was attended by 93 people. Most of those who spoke at this meeting strongly opposed the recommended alternatives. A local resident organized a petition drive that yielded 1,500 signatures opposing the new terrain alternatives 2A/B and 3A/B.

Following the January meeting, written comments were also received from the Dearborn, Ohio, Ripley and Switzerland County Commissioners stating their opposition to the new terrain alternatives 2A/B and 3A/B. In addition written comments were also received from the State Legislators in House District 68 and Senate District 43 documenting opposition to alternatives 2A/B and 3A/B.

INDOT Decision Making

The SR101 Corridor Planning/Environmental Assessment Study consultant report recommendation finds a new terrain roadway providing a new connection between I-74 and the Markland Dam SR101 Bridge over the Ohio River (Alternatives 2A/B and 3A/B) best meets the purpose and need objectives of improving roadway safety, reducing accident frequency and improving regional accessibility and connectivity over the long-term. The consultant report further recommends a phased implementation program of:

1. (Immediate or Near-term). Identification of specific locations of traffic operational and safety problems in Switzerland and Ohio counties and application of low-cost TSM-type safety improvements. Such improvements can be expedited and applied on an as-needed basis to address the highest priority locations in advance of any substantial new highway development project. Priority roadways should be SR 129, SR 56 and SR 156. Enhancements could include a variety of improvements such as pavement and shoulder widening and reductions in steep grades and tight curves. This would include the completion of the major reconstruction of SR 129 between SR 250 and SR 56 with improved vertical/horizontal curves, lane widths and shoulder widths improvements to improve safety and apply modern highway design standards. These projects would likely be "categorically excluded" from further NEPA documentation. However, if not categorically excluded, appropriate NEPA documentation will be prepared as needed.

2. Phase 2 (Medium-term – 10 to 20 years). Initially, INDOT must make a decision whether to advance a project into this next phase. If a decision is made to proceed, the NEPA process would be continued to complete the Environmental Assessment (EA) or, if required, to prepare an Environmental Impact Statement (EIS). Following completion of the NEPA review process, the southern portion of either Alternative 2B or 3B between Markland Dam and U.S. 50 would be designed and constructed. A new roadway between Markland Dam and U.S. 50 would be a "segment of SR 101 Corridor Improvement Feasibility/NPEA Study independent utility." In the

absence of a future connection between I-74 and U.S. 50 (see Phase 3), traffic to the new roadway south of U.S. 50 would be carried by SR 129 from the northwest and U.S. 50 from the northeast. Concurrent with the construction of the southern portion of the alignment, the right-of-way for the northern portion from U.S. 50 to I-74 should be delineated with efforts undertaken to preserve the right-of-way for future transportation development.

3. Phase 3 (Long-term – 20+ years). Completion of the northern portion of Alternative 2B or 3B from U.S. 50 to I-74. A new roadway between U.S. 50 and I-74 would be a "segment of independent utility" but assumes prior construction of Phase 2 improvements to achieve the project's defined purpose and needs.

Based upon the economic feasibility analysis all three of the alternatives studied, none were evaluated as achieving a 1.0 benefit/cost ratio or positive net present value, indicating project benefits would exceed project costs. In view of this low return on a major roadway investment and the strong opposition to a new alignment roadway, the Phase 1 recommendations will be pursued and no new major project providing a new connection will be advanced. INDOT will complete the improvements to reconstruct, realign and widen lane and shoulder on SR129 from SR250 to SR56. This project, beginning construction in 2004, is funded for $27.6 million. In addition the northern portion of SR129 from SR250 north to US421 was reconstructed in the 2000/2001 time period at a cost of $2.4 million. The INDOT Seymour District in coordination with the central office will identify and program TSM-type intersection improvements, pavement and shoulder widening and reductions vertical/horizontal curves to eliminate safety hazards and apply modern highway design standards to SR56 and SR156. In the INDOT 2004 plan update the US50 to I-71 connection via SR129, SR56/SR156 to SR101 (and KY39) will be evaluated to be potential upgraded from a local access mobility corridor to a regional mobility corridor to reflect the increased significance of this roadway.

SR101 Corridor Planning/EA Reports

SR 101Corridor Improvement Feasibility Study: Existing Conditions Report
Dearborn, Jefferson, Ohio, Ripley and Switzerland Counties, Indiana
May 2001

Draft Statement of Purpose and Need: SR 101 Corridor Improvement Feasibility Study
January 2002

Screening of Preliminary Alternatives: SR 101 Corridor Improvement Feasibility Study
March 2002

SR 101 Corridor Improvement Feasibility/NEPA Study: Final Report
June 2003

INDOT SR101 Web Page http://www.in.gov/dot/projects/sr101/index.html

All of the SR101 reports, meeting notes, public meeting notices with meeting notes and stakeholder comments are available on CD-ROM.